

Motorola[®] HOME Radio

SERVICE MANUAL

MODELS

6F11

6F11B

CHASSIS

HS-264

GENERAL INFORMATION

TYPE - AM Radio-Phonograph Combination

RECEIVER MODELS -

Model	Color
6F11	Red-brown mahogany
6F11B	Blonde

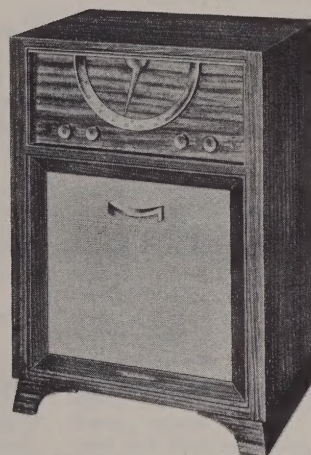
TUNING RANGE - 535 to 1620 Kc

IF FREQUENCY - 455 Kc

TUBE COMPLEMENT -

6BA6	RF Amplifier
6BE6	Converter
6BA6	IF Amplifier
6AV6	Detector & 1st Audio Amp
6K6GT	Power Amplifier
5Y3GT	Rectifier

POWER SUPPLY - 117 volts, 60 cycle AC only; 80 watts, including phono motor



PHONOGRAPH - Model RC-37, three-speed: 33, 45 & 78 RPM. Refer to the RC-37 Service Manual for record changer service information.

INSTALLATION & OPERATING INSTRUCTIONS

ANTENNA

No outside antenna or ground is normally required for radio reception, as a loop antenna is located inside the cabinet. Two wires from the chassis connect to the loop.

In locations where additional pick-up is desired, an external antenna may be connected to the clip marked "EXT BC ANT" on the loop.

CONTROLS

Refer to Figure 1 for the locations of the radio operating controls.

Power for both the radio and the record changer is controlled by the VOL-ON-OFF knob. The phonograph motor will not operate, however, until the PHONO-RADIO knob is rotated to "PHONO".

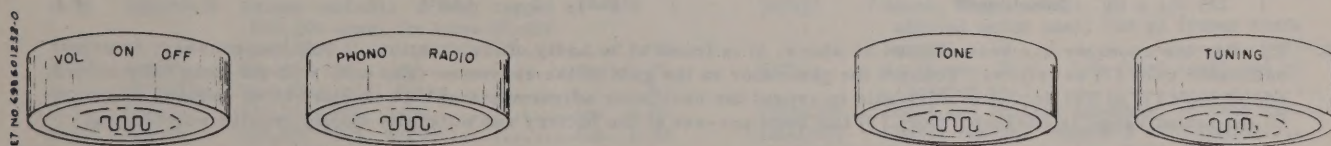


FIGURE 1. OPERATING CONTROLS

4545 AUGUSTA BOULEVARD

Motorola Inc.

CHICAGO 51, ILLINOIS

SERVICE NOTES

TO REMOVE CHASSIS FROM CABINET:

1. Remove the screws from the cabinet back.
2. Disconnect the phono power lead, the phono pick-up lead, the speaker leads, the line cord, and the antenna loop leads.
3. Remove the pointer escutcheon by pulling it downward.
4. Turn the tuning knob counterclockwise until the pointer reaches the extreme low frequency end of the dial scale.
5. From the back of the cabinet, loosen the pointer adjustment setscrew (see Figure 2), and pull the pointer and shaft assembly from the chassis. **CAUTION:** Do not remove the nut from the front of the pointer, as the detent ball and spring will fall out and may become lost.
6. Pull off the control knobs.
7. Remove the three chassis mounting screws, from

beneath the chassis.

8. Slide the chassis from the cabinet.

TO CALIBRATE DIAL:

1. Turn the tuning knob counterclockwise until the end of its travel is reached.
2. From the back of the cabinet, loosen the pointer adjustment setscrew (see Figure 2). **CAUTION:** Do not remove the nut from the front of the pointer.
3. Move the pointer until it is in a horizontal position (at the low frequency end of the dial scale).
4. Tighten the adjustment setscrew.

NOTE: If the pointer is moved by hand accidentally, it will be released from a detent in the pointer collar, and no damage to the tuning mechanism will result. To reset the pointer, move it back and forth until it again engages in the detent.

ALIGNMENT

1. Connect a low range output meter across the speaker voice coil.
2. Connect an AM signal generator as in chart below.
3. Set the signal generator for 400 cycle, 30% modulation.
4. Rotate the PHONO-RADIO switch to the "RADIO" position.
5. Turn the receiver volume control to maximum.
6. Use a small fibre screwdriver for aligning the IF and diode transformers.
7. As stages are brought into alignment, reduce the signal generator output to a level which produces less than 1.27 volts (.5 watt) across the voice coil, to avoid overloading the receiver.
8. See Figure 3 for adjustment locations, and the following chart for procedure.

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	GANG SETTING	ADJUST	REMARKS
IF ALIGNMENT						
1.	.1 mf	Grid of conv V-2 (pin 7, 6BE6)	455 Kc	Fully opened	1, 2, 3 & 4 (IF cores)	Adjust for maximum.
RF ALIGNMENT						
2.	.1 mf	Grid of conv V-2 (pin 7, 6BE6)	1620 Kc	Fully opened	5 (Osc)	Adjust for maximum.*
3.	-	-	-	-	-	Connect BC loop to chassis.
4.	-	Across radiation loop**	1400 Kc	Tune in signal	8 (Ant)	Adjust for maximum.

5. If, after the receiver has been aligned as above, it is found to be badly off calibration, it will be necessary to adjust oscillator core (7) as follows: connect the generator to the grid of the converter tube and, with the gang fully closed, adjust core (7) at 535 kc. It is advisable to repeat the oscillator adjustments at 1620 kc and 535 kc several times until the tuning range is correct. Core (7) has been pre-set at the factory and normally should require no retuning.

* If difficulty is encountered in tuning trimmer (5), adjust trimmer (6) to 1/2 turn from tight.

** Connect generator output across 5" diameter, 5 turn loop and couple inductively to receiver loop. Keep loops at least 12" apart.

REPLACEMENT PARTS LIST

NOTE: When ordering parts, specify model number of set in addition to part number and description of part.

Ref. No.	Part No.	Description	List Price
CHASSIS PARTS - ELECTRICAL			
<u>Capacitors</u>			
C-1	19B691877	Variable: 2- gang.....	3.00
C-2	21B77286	Ceramic: 100 mmf 500V.....	.20
C-3	8R9816	Paper: .05 mf 400V.....	.20
C-4	21K482726	Ceramic, disc type: 10,000 mmf 450V.....	.30
C-5	21B77286	Ceramic: 100 mmf 500V.....	.20
C-6	21K77373	Ceramic: 47 mmf 500V.....	.20
C-7	21K482726	Ceramic; disc type: 10,000 mmf 450V.....	.30
C-8	23B690975	Electrolytic: 40 mf/300V, 40-40 mf/250V, 40 mf/25V.....	2.45
C-9	21K482726	Ceramic; disc type: 10,000 mmf 450V.....	.30
C-10	21K482726	Ceramic, disc type: 10,000 mmf 450V.....	.30
C-11	8R9809	Paper: .01 mf 400V.....	.20
C-12	8R9813	Paper: .005 mf 600V.....	.20
C-13	8R9809	Paper: .01 mf 400V.....	.20
C-14	8R9813	Paper: .005 mf 600V.....	.20
C-15	8R9813	Paper: .005 mf 600V.....	.20
C-16	8R490232	Tubular, molded: .047 mf 400V....	.25
C-17	21B77286	Ceramic: 100 mmf 500V.....	.20
C-18	8R9847	Paper: .002 mf 600V.....	.20

Pilot Light

I-1,2	65X10867	Bulb, pilot light: #44; 6-8V; .25 amp; clear; bayonet base.....	.15
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Coils

L-1	24C690896	Loop Antenna.....	1.20
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Speaker

LS-1	50C601038	Speaker: 8" PM; 3.2 ohm V.C.....	7.25
		Exch	5.45

Resistors

NOTE: All resistors are insulated, carbon type unless otherwise specified.

R-1	6R6004	1 meg 20% 1/2W.....doz	1.00
R-2	6R5551	120 10% 1/2W.....doz	1.00
R-3	6R5766	12,000 10% 2W.....	.20
R-4	6R6069	2200 10% 1/2W.....doz	1.00
R-5	6R6012	33,000 20% 1/2W.....doz	1.00
R-6	6R6056	47,000 20% 1/2W.....doz	1.00
R-7	6R5766	12,000 10% 2W.....	.20
R-8	17A690973	Wire wound: 360 10% 3W; centic tapped.....	.55
R-9	6R6270	220 10% 1/2W.....doz	1.00
R-10	6R6056	47,000 20% 1/2W.....doz	1.00
R-11	6R6056	47,000 20% 1/2W.....doz	1.00
R-12	6R3927	2.2 meg 20% 1/2W.....doz	1.00
R-13	6R2109	10 meg 20% 1/2W.....doz	1.00
R-14	6R6032	470,000 20% 1/2W.....doz	1.00
R-15	18A600974	Volume control: 2 meg; tapped at 600,000 ohms; includes ON-OFF switch.....	1.50
R-16	6R6074	68,000 10% 1/2W.....doz	1.00
R-17	18K77399	Tone Control: 1 meg.....	.80
R-18	6R6032	470,000 20% 1/2W.....doz	1.00
R-19	6R6015	220,000 20% 1/2W.....doz	1.00
R-20	6R5593	470 10% 1W.....each	.15
		doz	1.45

Switches

S-1	40B601065	Switch, PHONO-RADIO.....	.85
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Ref. No.	Part No.	Description	List Price
<u>Transformers</u>			
T-1	25B600684	Power Transformer.....	5.90
T-2	24K691878	Oscillator Transformer: white & red dot.....	.50
T-3	24B485553	IF Transformer (green dot): 455 Kc; complete with capacitors, cores, and shield.....	.95
T-4	24K485555	Diode Transformer (pink dot): 455 Kc; complete with capacitors, cores, and shield.....	1.20
T-5	25B600969	Audio Output Transformer.....	1.45

Part No.	Description	List Price
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CHASSIS PARTS - MECHANICAL

70C690567	Bracket, gang mtg.....	.35
7A600965	Bracket, pilot light mtg.....	.10
7B600801	Bracket, pointer mtg.....	.20
7A77337	Bracket, tuning shaft.....	.05
43A890397	Bushing, tire cord strain relief (use with 43K890398).....	.05
43K890398	Bushing, tire and retainer (use with 43A890397).....	.05
42A485548	Clip, coil can mtg (IF transformers).....doz	.20
11M8944	Cord, dial (pointer drive).....yard	.10
30K21859	Cord, line: with plug; 9 ft long.....	1.00
15A600877	Cover, volume control: with insulator...	.10
1X600495	Lead and Plug Assembly, phono pick-up....	.65
4S9751	Lockwasher int-ext: #8; cad pl pointer & gang drive pulleys mtg).....per/c	.50
2S7051	Nut, hex palnut: 3/8-32 x 9/16; cad pl (control mtg).....doz	.15
28K71775	Plug, phono pick-up.....	.10
49A690559	Pulley, gang drive: 3 1/2" diameter.....	.25
49A690558	Pulley, pointer drive: 1 1/4" diameter..	.15
9A600040	Receptacle, phono motor: 3 prong; includes shell.....	.15
5S7771	Rivet: .088 x 3/16 stl; nkl pl (min socket mtg).....per/c	.50
5S7707	Rivet: .122 x 5/32 stl; nkl pl (term strip mtg).....per/c	.50
5S7701	Rivet: .122 x 3/16 stl; nkl pl (output trans mtg).....per/c	.50
5S7700	Rivet: .122 x 1/4 stl; nkl pl (octal socket mtg).....per/c	.50
3S7326	Screw, machine: 8-32 x 3/16 plain locking hex head; cad pl (gang mtg).....doz	.20
3S7163	Screw, machine: 8-32 x 1/4 plain hex head; cad pl (pointer & gang drive pulleys mtg).....per/c	.50
3S2695	Screw, sheet metal: #6 x 3/16 PKZ plain hex head; cad pl (holds gang mtg brkt).....per/c	.50
3S7506	Screw, sheet metal: #6 x 1/4 PKZ plain hex head; cad pl (holds pointer mtg brkt).....per/c	.50
3S7454	Screw, sheet metal: #8 x 1/4 PKZ plain hex head; cad pl (pilot light brkt mtg).....per/c	.50
3S7475	Screw, sheet metal: #8 x 1/4 PKZ slotted acron head; cad pl (power trans mtg).....per/c	.50
3S7103	Setscrew: 8-32 x 1/8 allen head; cad pl (pointer mtg).....	.10
1K601085	Shaft and Pulleys Assembly, pointer mtg..	.30
1X600489	Shaft, tuning: complete with pulley....	.20
15A690616	Shell, receptacle (on phono motor receptacle).....	.05
9K600968	Socket, pilot light.....	.25
9K484167	Socket, tube: miniature; 7-prong.....	.20
9A76209	Socket, tube: octal.....	.15
41A14244	Spring, tension (pointer drive cord).....doz	.55

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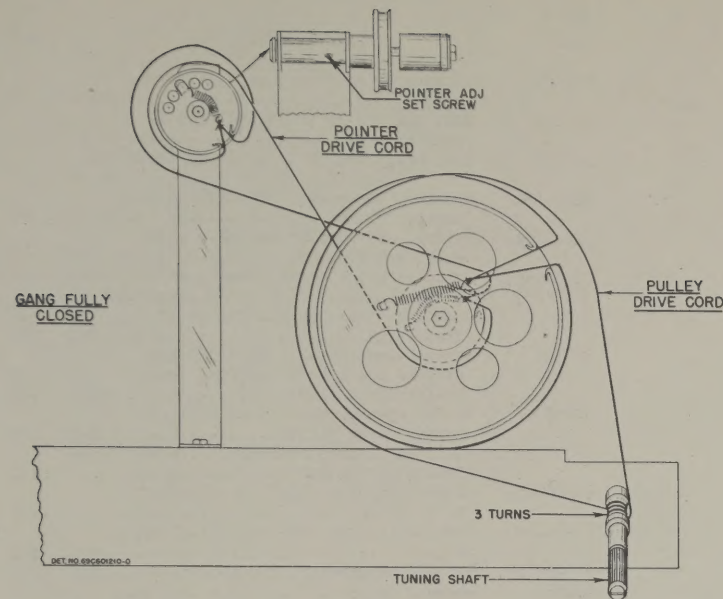


FIGURE 2.
DIAL RESTRAINING DETAIL

FIGURE 3. TUBE
AND TRIMMER LOCATIONS

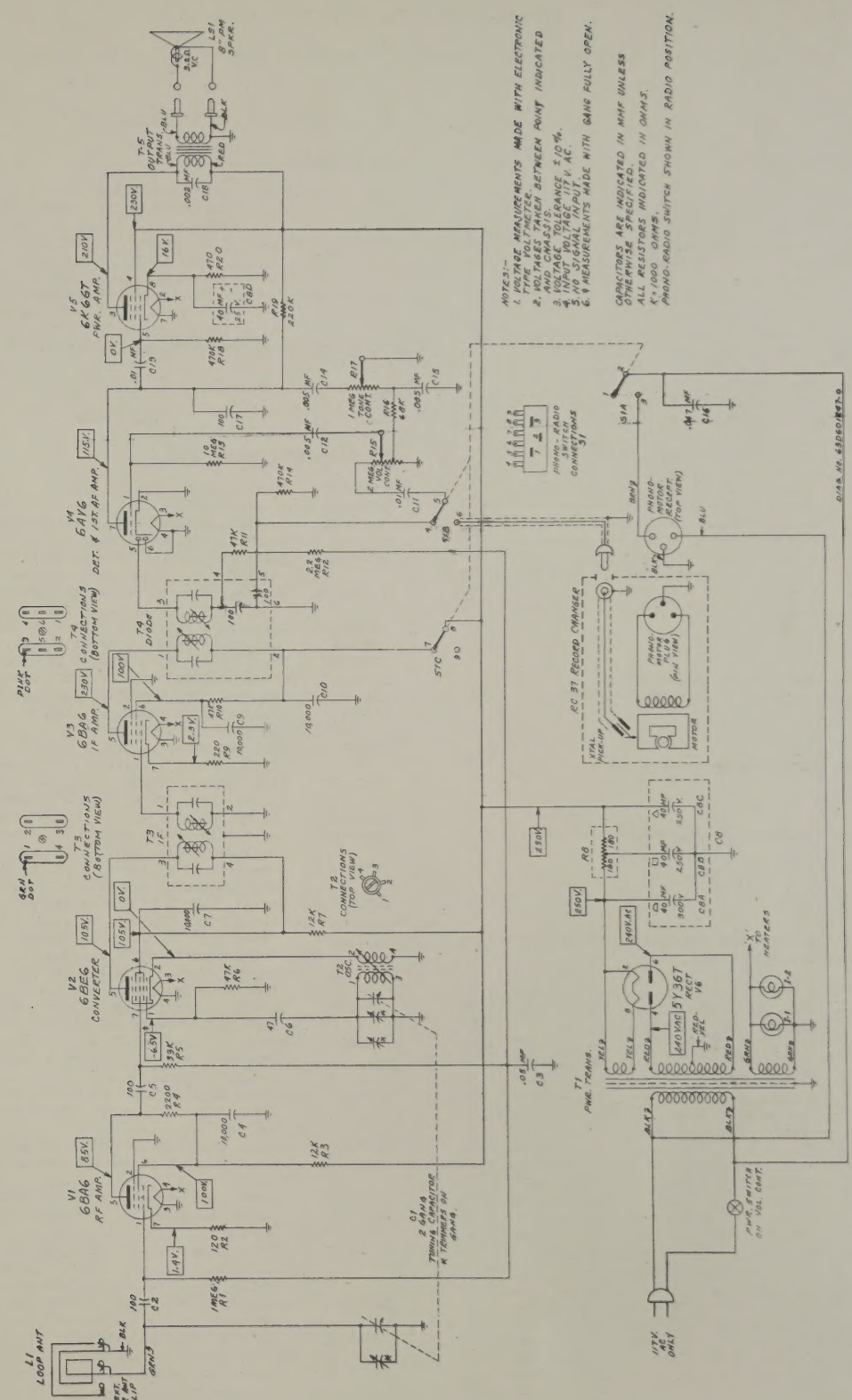
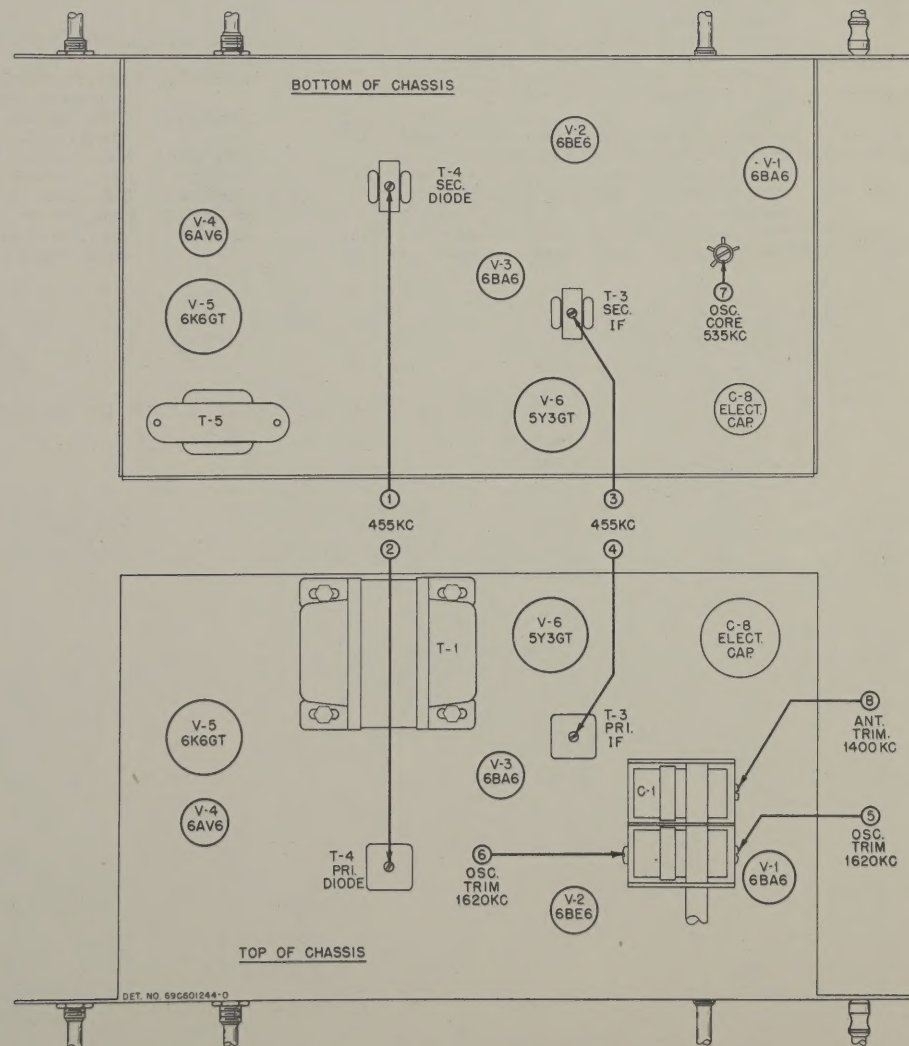


FIGURE 4. SCHEMATIC DIAGRAM

Part No.	Description	List Price	Part No.	Description	List Price
31K37494	Strip, terminal: 4 insulated lugs, #3 gnd; 3/8" spacing.....	.10	4S7657	Lockwasher ext: #8; cad pl (spkr mtg).....per/c	.50
31K90046	Strip, terminal: 5 insulated lugs, #4 gnd; 3/8" spacing.....	.10	2S7005	Nut, hex: 6-32 x 1/4 stl; cad pl (pointer mtg).....per/c	.50
29K5405	Terminal pin (on speaker leads).....	.05	2S7003	Nut, hex: 8-32 x 5/16; cad pl (spkr mtg).....per/c	.50
4A70015	Washer, "C" (tuning shaft mtg).....per/c	.50	62K70581	Overlay, logotype: "Motorola"; gold lacquer finish.....	.40
4A21941	Washer, "C" (holds pointer mtg shaft & pulley).....per/c	.50	1X600851	Pointer and Collar Assembly (less shaft and sleeve).....	.45
4S7555	Washer, flat: 1/4 x .128 x .033 stl; cad pl (output trans mtg).....per/c	.50	55K600653	Pull, record changer drawer: satin brass.	.95
4S7582	Washer, flat: 1/2 x .195 x .033 stl; cad pl (pointer & gang drive pulleys mtg).....per/c	.50	3K600655	Screw, machine: 8-32 x 1/2 cross slot head; statuary bronze finish (R.C. drawer pull mtg).....doz	.20
4A691006	Washer, flat: double "D" (pointer & gang drive pulleys mtg).....doz	.20	3S7536	Screw, sheet metal: #6 x 3/8 PKA slotted acron head; antique copper finish (back cover mtg).....per/c	.50
MODEL 6F11 CABINET PARTS			3K653	Screw, speaker mtg: 8-32 x 1 1/4" copper oxide finish.....doz	.20
43A4326	Ball, steel: 1/8" dia (pointer detent) doz	.15	1A690738	Shaft and Sleeve Assembly, pointer: less detent spring and ball, and pointer.....	.20
38K691915	Button, plug (on record changer).....doz	.30	55K600654	Slide, record changer (on sides of R. C. drawer).....	1.25
16F600649	Cabinet, console: red-brown mahogany; complete less pointer escutcheon and dial scale.....	-	2S400199	Speed nut: for .050 stud (dial scale mtg).....doz	.15
13K600651	Cloth, grille: 17 1/2" x 18 1/4"; mahogany.....	2.50	41A690732	Spring, compression (pointer detent).....doz	.15
15C600874	Cover, cabinet back.....	1.40	4S1765	Washer, flat: 1/2 x .147 x .015 stl; cad pl (pointer mtg).....per/c	.50
34K601066	Dial scale.....	3.95	MODEL 6F11B CABINET PARTS - Same as 6F11 except:		
34K600817	Escutcheon, pointer.....	.25	16K600650	Cabinet, console: blonde; complete, less pointer excutcheon and dial scale.....	-
5S7870	Eyelet: brass (on R. C. drawer panel - holds extra spindle).....doz	.15	13K600652	Cloth, grille: 17 1/2" x 18 1/4"; egg shell.....	2.50
5A71081	Eyelet, chassis mtg: plain; 9/32" long.....doz	.15	36K601058	Knob, control (VOL-ON-OFF); tan.....	.45
5A600963	Eyelet, chassis mtg: pierced; 1/8" long.....doz	.15	36K601059	Knob, control (PHONO-RADIO); tan.....	.45
5A71092	Grommet, chassis mtg: rubber.....doz	.50	36K601061	Knob, control (TONE); tan.....	.45
36K601052	Knob, control (VOL-ON-OFF): walnut-mahogany.....	.45	36K601062	Knob, control (TUNING); tan.....	.45
36K601053	Knob, control (PHONO-RADIO): walnut-mahogany.....	.45	3K600656	Screw, machine: 8-32 x 1/2 cross slot head; brass (R. C. drawer pull mtg).....doz	.20
36K601054	Knob, control (TONE): walnut-mahogany....	.45			
36K601055	Knob, control (TUNING) walnut-mahogany...	.45			

PRICES SUBJECT TO CHANGE WITHOUT NOTICE